

CLAIMS:

1. A method of controlling a read-out operation from a magneto-optical recording medium (10), said recording medium comprising a storage layer and a read-out layer, wherein a domain is expanded in said read-out layer by copying a mark region from said storage layer to said read-out layer upon heating by a radiation beam having a radiation power and with the help of an external magnetic field, said method comprising the steps of:
5 modulating said external magnetic field to control the expansion of said domain during an expansion period and to control the collapse of said domain during a collapse period; and increasing said radiation power during at least part of said collapse period of said external magnetic field to a first level, said first level being higher than a second level applied during
10 said expansion period of said external magnetic field.
2. A method according to claim 1, wherein said increasing of said radiation power is obtained by adding an additional radiation pulse during said part of said collapse period.
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3. A method according to claim 2, wherein said increasing of said radiation power is obtained by adding said additional radiation pulse immediately after an expansion radiation pulse of said second level.
- 20 4. A method according to claim 2, wherein the duty cycle of said additional pulse is greater than 70%.
5. A method according to claim 4, wherein the duty cycle of said higher level is about 100%.
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6. A method according to claim 2, 3, 4 or 5, wherein said radiation power is decreased with respect to said second level for a predetermined time period immediately after said additional radiation pulse.

7. A method according to claim 1 or 2, wherein said external magnetic field is reduced to a stabilizing level after the expansion of said domain.
8. A method according to claim 1 or 2, wherein a first radiation pulse is applied during said expansion period and a second radiation pulse is applied during said collapse period, said first radiation pulse being shorter than said second radiation pulse.
9. A method according to claim 1 or 2, wherein the timing of the application of said first level is selected such that the thermal decay from a predetermined collapse temperature starts just before the beginning of said expansion period of said external magnetic field.
10. A method according to claim 1 or 2, wherein the radiation spot size selected during the application of said first level of radiation power differs from the radiation spot size selected during the application of said second level of radiation power.
11. A method according to claim 10, wherein a smaller spot size is used to induce the copy process and a larger spot size is used during said collapse period.
12. A method according to claim 11, wherein the application of said smaller spot size starts immediately after the application of said larger spot size.
13. A method according to claim 2, wherein an asymmetrical duty cycle switching is used for applying said external magnetic field, while the timing of said additional pulse relative to the switching of said external magnetic field corresponds to a symmetrical switching.
14. A method according to claim 2, wherein a data-dependent switching is used for applying said external magnetic field, and wherein said additional pulse is applied only after a mark detection.
15. A method according to claim 14, wherein a radiation spot size used during said collapse period differs from a radiation spot size used during said expansion period.

16. A method according to claim 1 or 2, wherein said increasing of said radiation power is performed such that the temperature of said read-out layer during said collapse period is higher than or equal to the temperature of said read-out layer during said expansion period.

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17. A reading apparatus for controlling a read-out operation from a magneto-optical recording medium (10) comprising a storage layer and a read-out layer, wherein a domain is expanded in said read-out layer by copying a mark region from said storage layer to said read-out layer upon heating by a radiation power with the help of an external magnetic field, said apparatus comprising:

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a) modulating means (20) for modulating said external magnetic field so as to control the expansion of said domain during an expansion period and to control the collapse of said domain during a collapse period; and

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b) power control means (32) for increasing said radiation power during at least part of said collapse period of said external magnetic field to a first level, said first level being higher than a second level applied during said expansion period of said external magnetic field.

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18. An apparatus according to claim 17, wherein said reading apparatus is a disk player for MAMMOS disks.

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19. An apparatus according to claim 17, wherein said power control means (32) is adapted to increase said radiation power by adding an additional radiation pulse during said part of said collapse period.

20. An apparatus according to claim 17, wherein said modulating means (20) is adapted to reduce said external magnetic field to a stabilizing level after the expansion of said domain.

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21. An apparatus according to claim 17, wherein said power control means (32) is adapted to apply a first radiation pulse during said expansion period and a second radiation pulse during said collapse period, said first radiation pulse being shorter than said second radiation pulse.

22. An apparatus according to claim 17, wherein said power control means (32) is adapted to select the timing of the application of said second level such that the thermal decay from a predetermined collapse temperature starts just before the beginning of said expansion period of said external magnetic field.

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23. An apparatus according to claim 17, wherein said apparatus is adapted to select a radiation spot size during the application of said first level of radiation power which differs from the radiation spot size selected during the application of said second level of radiation power.

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24. An apparatus according to claim 17, wherein said power control means (32) is adapted to increase said radiation power such that the temperature of said read-out layer during said collapse period is higher than or equal to the temperature of said read-out layer during said expansion period.